SAFETY DATA SHEET

Issuing Date 01-Jul-2024 **Revision date** 04-Mar-2025 **Revision Number** 2

1. Identification

Product identifier

Product Name Titanium Dioxide Pigment:
TiONA® 113, TiONA® 121, TiONA® 122, TiONA® 128, TiONA® 134, TiONA® 592, TiONA® 595, TiONA® 595, TiONA® 696, TiONA® 822 / CR-822, TiONA® 826 / CR-826, TiONA® 828 / CR-828, TiONA® 828E / CR-828E, TiONA® 834 / CR-834, TiONA® 880 / CR-880, TiONA® 8950, TiONA® 41J /41J, TiONA® CR-8 / CR-8, TiONA® R-KB-2, TiONA® R-U-F, TiKON™ 35 / TiKON™ TR-35

Other means of identification

Synonyms Titanium dioxide

Recommended use of the chemical and restrictions on use

Recommended use Pigment

Restrictions on use For industrial use only

Details of the supplier of the safety data sheet

Supplier Address
Tronox LLC
3301 NW 150th Street
Oklahoma City, OK, USA 73134
tele: +1-405-775-5000 (24-hours)

E-mail chemprodsteward@tronox.com

Emergency telephone number

Emergency Telephone 24 Hour Emergency Phone Number
CHEMTREC (USA) 1-800-424-9300
CHEMTREC (International): +1 703 527 3887

2. Hazard(s) identification

Classification

Reproductive toxicity	Category 2

Hazards not otherwise classified (HNOC)
Not applicable.

Label elements

Warning

Hazard statements
Suspected of damaging fertility or the unborn child.

Precautionary Statements - Prevention
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/clothing and eye/face protection.

Precautionary Statements - Response
Get medical advice/attention if you feel unwell.

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant.

Other information
In the U.S. (per OSHA HCS) and in Canada (per WHMIS), a manufacturer is required to classify a mixture as a reproductive hazard when it contains an ingredient classified as a reproductive hazard at a concentration above the specified concentration limit of 0.1% unless the manufacturer has data demonstrating that the product does not present that health risk. This hazard classification applies to a single ingredient (Trimethylolpropane) present at levels <0.5% by weight in the finished product.

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

Synonyms Titanium dioxide.

Chemical name	CAS No.	Weight-%	Trade secret
Titanium dioxide	13463-67-7	> 80	*
Trimethylolpropane (TMP)	77-99-6	< 0.45	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First-aid measures

Description of first aid measures

General advice Get medical advice/attention if you feel unwell.

Inhalation Remove to fresh air. If symptoms persist, call a physician.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water.

Ingestion Clean mouth with water and drink afterwards plenty of water.

Self-protection of the first aider Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Symptoms Inhalation of dust in high concentration may cause irritation of respiratory system.

Effects of Exposure Suspected of damaging fertility. Suspected of damaging the unborn child.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical Avoid generation of dust.

Hazardous combustion products Non-combustible.

Explosion data

Sensitivity to mechanical impact Not impact sensitive.

Sensitivity to static discharge Not sensitive.

Special protective equipment and precautions for fire-fighters Protective equipment and precautions for firefighters.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation. Avoid contact with skin and eyes. Avoid generation of dust. Use personal protective equipment as required.

Other information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Take up mechanically, placing in appropriate containers for disposal.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Reference to other sections See section 8 for more information. See section 13 for more information.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Ensure adequate ventilation. Avoid contact with skin and eyes. Avoid generation of dust. Use personal protection equipment.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place.

Packaging materials Product may be packaged in normal commercial packaging; paper or plastic material.

8. Exposure controls/personal protection

Control parameters

Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Titanium dioxide 13463-67-7	TWA: 0.2 mg/m^3 nanoscale respirable particulate matter TWA: 2.5 mg/m^3 finescale respirable particulate matter	TWA: 15 mg/m^3 total dust (vacated) TWA: 10 mg/m^3 total dust	IDLH: 5000 mg/m^3

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Safety glasses with side shields are recommended for medical or industrial exposures.

Hand protection Wear suitable gloves. Wash face, hands and any exposed skin thoroughly after handling.

Skin and body protection No special protective equipment required. If there is a risk of contact:. Wear suitable protective clothing.

Respiratory protection None under normal use conditions. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Environmental exposure controls Prevent product from entering drains. See Section 12 for additional Ecological Information.

General hygiene considerations Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice. Wash hands and face before breaks and immediately after handling the product. Regular cleaning of equipment, work area and clothing is recommended. Take off contaminated clothing and wash it before reuse.

Thermal hazards None under normal processing.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state Solid
Appearance Powder

Color	white
Odor	None
Odor threshold	Not applicable

Property	Values	Remarks • Method
pH	6-9	10g/100ml aqueous solution
pH (as aqueous solution)		None known
Melting point / freezing point	1830 °C / 3326 °F	
Boiling point / boiling range	2972 °C / 5381.6 °F	
Flash point	No data available	Not applicable
Evaporation rate	No data available	
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		Not applicable
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	Not applicable
Vapor density	No data available	Not applicable
Relative density	3.7-4.1	(water = 1)
Water solubility	Insoluble in water	
Solubility(ies)	Insoluble in common solvents	
Partition coefficient	No data available	No data available
Autoignition temperature	375 °C / 707 °F	Not applicable
Decomposition temperature		Not applicable
Kinematic viscosity	No data available	Not applicable
Dynamic viscosity	No data available	Not applicable

Other information	
Explosive properties	Not an explosive
Oxidizing properties	None known
Softening point	No information available
Molecular weight	No information available
VOC content	None
Liquid Density	No information available
Bulk density	0.4 - 0.8 g/cm3

10. Stability and reactivity

Reactivity Stable.

Chemical stability Stable under normal conditions.

Possibility of hazardous reactions None under normal processing.

Hazardous polymerization None under normal processing.

Conditions to avoid Dust formation.

Incompatible materials None known.

Hazardous decomposition products None under normal use conditions.

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye contact Inert foreign body hazard only.

Skin contact Repeated exposure may cause skin dryness or cracking.

Ingestion Not an expected route of exposure.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Inhalation of dust in high concentration may cause irritation of respiratory system.

Acute toxicity .

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Titanium dioxide 13463-67-7	> 5000 mg/kg (Rat)	-	> 6,82 mg/L (Rat) 4 h
Trimethylolpropane (TMP) 77-99-6	= 14100 mg/kg (Rat)	> 10000 mg/kg (Rabbit)	> 0.85 mg/L (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation Based on available data, the classification criteria are not met.

Respiratory or skin sensitization Based on available data, the classification criteria are not met.

Germ cell mutagenicity Based on available data, the classification criteria are not met.

Carcinogenicity Based on available data, the classification criteria are not met.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Titanium dioxide 13463-67-7	A3	Group 2B	-	-

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)
A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)
Group 2B - Possibly Carcinogenic to Humans

Reproductive toxicity Suspected of damaging fertility or the unborn child. Contains a known or suspected reproductive toxin. Classification based on individual ingredients of the mixture.

Developmental toxicity May cause harm to the unborn child. Contains ingredients that have suspected developmental hazards. Classification based on individual ingredients of the mixture.

Teratogenicity None known.

STOT - single exposure Based on available data, the classification criteria are not met.

STOT - repeated exposure Based on available data, the classification criteria are not met.

Aspiration hazard Not applicable.

Other adverse effects None known.

12. Ecological information

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Titanium dioxide 13463-67-7	ErC50: >100 mg/l (72h, Pseudokirchneriella subcapitata	LC50: >1000 mg/l (96h, Pimephales promelas)	-	-
Trimethylolpropane (TMP) 77-99-6	-	-	-	EC50: =13000mg/L (48h, Daphnia species) EC50: 10330 - 16360mg/L (48h, Daphnia magna)

Persistence and degradability Titanium Dioxide, is an inorganic metal oxide, therefore this does not apply. Trimethylolpropane is readily biodegradable and does not bioaccumulate.

Bioaccumulation Material does not bioaccumulate.

Component Information

Chemical name	Partition coefficient
Trimethylolpropane (TMP) 77-99-6	-0.47

Mobility Not mobile.

Other adverse effects None known.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT Not regulated

TDG Not regulated

MEX Not regulated

ICAO (air) Not regulated

IATA Not regulated

IMDG Not regulated

15. Regulatory information

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AIIC	Complies
NZIoC	Complies
TCSI	Complies

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals
TCSI - Taiwan Chemical Substance Inventory

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65
This product contains the following Proposition 65 chemicals:

Chemical name	California Proposition 65
Titanium dioxide - 13463-67-7	Carcinogen (airbourne, unbound particles of respirable size)

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Titanium dioxide 13463-67-7	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

NFPA	**Health hazards**	2	**Flammability**	0	**Instability**	0	**Special hazards**	-
HMIS	**Health hazards**	2	**Flammability**	0	**Physical hazards**	0	**Personal protection**	-

Chronic Hazard Star Legend ** = Chronic Health Hazard*

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend
SVHC: Substances of Very High Concern for Authorization:
PBT: Persistent, Bioaccumulative, and Toxic (PBT) Substances
vPvB: Very Persistent and very Bioaccumulative (vPvB) Substances
STOT: Specific Target Organ Toxicity
ATE: Acute Toxicity Estimate
LC50: 50% Lethal Concentration
LD50: 50% Lethal Dose

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
+	Sensitizers		

Key literature references and sources for data used to compile the SDS
Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
Environmental Protection Agency
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
National Institute of Technology and Evaluation (NITE)
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine’s PubMed database (NLM PUBMED)
U.S. National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Prepared By Product Stewardship

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Revision Note Product Listing Update

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage,

transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet